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## Acute Coronary Syndromes

### GC1QR: A NOVEL BIOMARKER ASSOCIATED WITH RISK OF CARDIOVASCULAR EVENTS

#### Poster Contributions

Poster Sessions, Expo North

Sunday, March 10, 2013, 3:45 p.m.-4:30 p.m.

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Session Title: The Blood Tells a Story: Coeptin, Fatty Acid Binding Protein, NT-Pro BNP and More

Abstract Category: 1. Acute Coronary Syndromes: Clinical

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**Background:** The gC1qR is a 33KDa protein, which interacts with components of the complement, kinin, and coagulation cascades, and select microbial pathogens. It is highly expressed in atherosclerotic lesions and on a variety of cells, including activated platelets and endothelial cells. Circulating gC1qR has never been studied in cardiovascular disease. We hypothesize that gC1qR is a potential biomarker of vascular disease and a predictor of future coronary events.

**Methods:** In this prospective observational study, circulating gC1qR was evaluated in the plasma of low and intermediate risk patients (n=278) presenting to an urban emergency department with chest pain. All patients were followed for major adverse cardiac event (MACE) for 6 months. 55% of patients (n=154) underwent stress testing. Circulating gC1qR was quantified using a sandwich immunocapture ELISA protocol. Optical density (OD) of the sample was standardized to a reference blank and 20nM gC1qR standard ( $\text{gC1qR ratio} = (\text{sample OD} - \text{blank OD}) / (20\text{nM gC1qR standard OD} - \text{blank OD})$ ). Ratios between 0 and 1 were considered positive for circulating gC1qR. Ratios < 0 were considered negative.

**Results:** Circulating gC1qR was > 0 in 60% of patients (n=167/278). No association was observed between gC1qR and gender, body mass index, hypertension, creatinine, previous coronary artery bypass grafting, smoking, or stress testing. An inverse correlation was found between circulating gC1qR and previous PCI (p=0.003), previous stroke (p= 0.02), hypertension medication (0.001), cholesterol medication (p=0.004), diabetes medication (0.02), mean NT-proBNP level (p=0.03), and cardiovascular risk (p=0.001). Trends toward significant associations between negative plasma gC1qR and diabetes mellitus (p= 0.054), age (p=0.055), and previous MI (p=0.059) were also noted. There was a statistically significant inverse correlation between circulating gC1qR and MACE at 6 months (n=29) (p=0.04).

**Conclusions:** The data suggest that the absence of circulating gC1qR may be associated with increased risk of cardiovascular events. Loss of circulating gC1qR likely reflects consumption or degradation during vascular injury and inflammation.